

PLANTAE NOVAE AFRICANAEE.

“Ex Africa semper aliquid novi.”—*Pliny.*

SERIES XV.

By PAYMASTER-CAPTAIN T. M. SALTER, R.N. (Ret.).

Asparagus compactus, Salter. (Liliaceae—Asparageae.)

Fruticulus rigidus erectus compactus spinosus ramosissimus, (nisi tamen rami) glaber, 40—60 cm., rare 1 m. altus, radicibus non tuberosis. *Rami* ramulique lignei, alternate tortuosi, pallidi, cinerei, longitudinaliter conspicue costellati, juniores minute puberuli. *Folia* parva, deltoidea, acuminata: calcar basale rigidum, pungens, leviter recurvum. *Cladodia* fasciculata, linearia, tereta, leviter arcuata, pungentia, 1—1.5 cm. longa, vel in umbra longiora et graciliora. *Flores* axillares, 1—3-nati, pedunculis 2—4 mm. longis, basin versus articulatis. *Perianthium* 3—4 mm. longum, segmentis anguste ellipticis albis, indistincte viridi-carinatis. *Filamenta* segmentis paullum breviora, basi edentata: antherae 0.6 mm. longae, aurantiaceae. *Ovarium* 2 mm. longum, loculis 5—8-ovulatis, stylo 0.5 mm. longo. *Bacca* globosa, 6—9 mm. diam., rubra.

Hab. Cape Province: Cape Peninsula, Orange Kloof, *Wolley-Dod* 2521, (*type* in Bolus Herbarium); Clovelly, *Salter* 8209; Wynberg Hill, 7180; Constantiaberg 7953; near Vasco de Gama Peak, 8188; Paarden Island 8068: Cape Division, Tygerberg, *Pillans* 8655: Caledon Div., Zwartberg, near Caledon, *Schlechter* 10364. Flowers throughout the year in different localities.

This species is an affinity of *A. laricinus* Burch, differing in its more compact habit, shorter spreading cladodia, shorter peduncles and smaller flower-clusters. It is plentiful on hillsides in the Cape Peninsula and it has long been known locally and very probably is identical with *A. africanus* Lam., var. *Wrightii* Baker, but it is inconceivable that it could ever have been considered as related to *A. africanus*. Unfortunately the description of this variety is very meagre. Professor R. H. Compton, during a recent visit to Europe, kindly searched for the *type* (*Wright* 454, Simonstown), but was unable to find it. He found, however,

that the late Dr. C. E. Moss has placed a note "C.f. *A. africanus*, var. *Wrightii*, C. E. M." against specimens at Kew and the British Museum collected by Prior—1847, Devil's Mt.—which are identical with the species described here and had written on the Species Cover at Kew " *A. Wrightii* (Baker)," perhaps intending to describe it as a new species under that name.

***Asparagus ovatus*, Salter. (Liliaceae—Asparageae.)**

Herba perennis subscandens, ramosa, omnino glabra, espinosa, ad 1 m. alta. *Radices* longi, numerosi, late diffusi, tuberis fusiformibus, 4—8 cm. longis, 1—2 cm. latis, rhizomati remotis. *Rami* angulares, dense internexi; ramuli floriferi patentes, 5—10 cm. longi. *Folia* parva, membranacea, ovata, apice longe attenuata. *Phyllocladia* sessilia, ovata vel late ovata, basi rotundata vel levissime cordata, apice breviter acuteque attenuata, 1—2 cm. longa, crassiuscula, nervis plurimis longitudinaliter induta. *Flores* axillares, penduli, solitarii vel binati, pedunculis 4—7 mm. longis, apicem versus articulatis. *Perianthium* 5—6 mm. longum, segmentis oblongis albis, carina viride. *Filamenta* dentibus 2 parvis basi instructa: antherae aurantiacae. *Ovari* loculi 8—10-ovulati. *Bacca* globosa, 1 cm. diam., deinde rubra.

Hab. Cape Province: Cape Div., sandy flats near Rugby, Salter 8214 (*type* in Bolus Herbarium) 8334: Visser's Hok, 8335: Malmesbury Div., Kalabas Kraal, 8336, 7 miles north of Malmesbury, 8340: Wellington Div., Hex Berg Farm, Mathews. Flowers July.

A close affinity of *Asparagus asparagoides* (L.) Wight, which is better known by its invalid name *A. medeoloides* (Cape Smilax). It differs from that species in its root system, the tubers being distant from the rootstock and not closely sessile in a congested cluster. These tubers are capable of producing new shoots at their proximal ends, so forming independent plants at some distance from the parent. The mature phyllocladia are rather wider in proportion to their length and stouter in texture and the ovary chambers are 8—10-ovuled, as opposed to about 6-ovuled in *A. asparagoides*.

Its distribution is not as yet very fully known, for dried specimens, without roots, are difficult to distinguish from some forms of *A. asparagoides*, but it is probable that some of the specimens at present attributed to that species are in reality *A. ovatus*. Unlike *A. asparagoides*, which is a true shade plant, it is found in more open sandy places, usually climbing on or through low shrubs, with the upper branches densely interwoven.

It is unfortunate that the root system in the South African species of *Asparagus* has hitherto been entirely neglected as a taxonomic

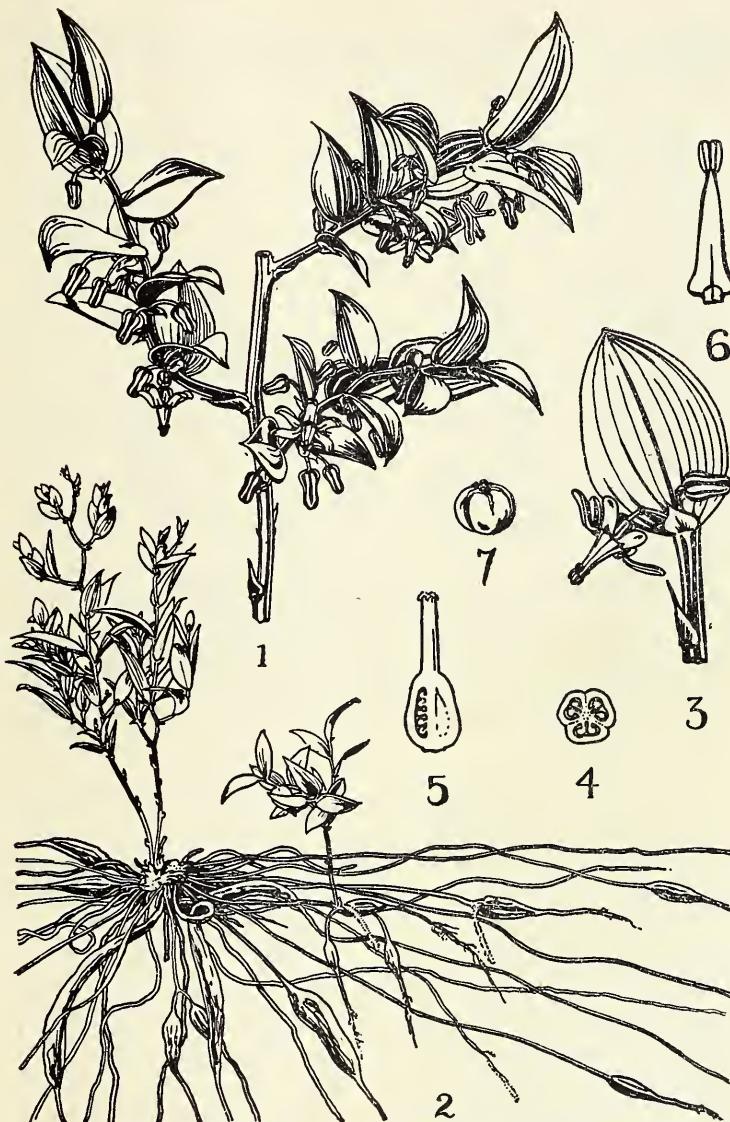


FIG. 1. *Asparagus ovatus* Salter. 1. Part of stem and flowering branchlets, natural size. 2. A young plant showing the root system $\times \frac{1}{2}$. 3. Phylloclade and flower $\times 2$. 4 and 5. Ovary $\times 5$. 6. Stamen $\times 5$. 7. Berry, natural size. (Salter 8334). Del. M. Walgate.

character, for the distinction between those with and those without tuberous roots seems to be of the first importance in the natural grouping of the species.

Drosera Zeyheri. Salter. (Droseraceae) § *Ptyenostigma*.

(*D. pauciflora* (Banks) ex D.C., var. *minor* Sond.) *Planta viscosa*, ad 9 cm. alta. *Folia* plerumque basalia, subrosulata, oblonga vel oblanceolata, et saepe 1—3 adscendentia, angustiora, scapi basin versus posita, 1.5—2.5 cm. longa, 2—4 mm. lata, estipulata, 1—3-nervata: tentacula pallida, filiformia, ea marginis apicalis foliorum basarium solum infimorum 3—5 mm. longa, levissime complanata, glandibus oblongis leviter convexis 0.4—0.5 mm. longis, cetera breviora, glandibus rubris omnibus obovoideis. *Scapus* erectus, uniflorus vel rarius 2—3-florus, sicut calyx pilis glanduloso-capitatis brevibus rubris copiose indutus, interdum basin versus 1—3-foliatus: bracteae minutae, filiformes: pedicelli erecti. *Calyx* 6—7 mm. longus, lobis ovatis tubo longioribus. *Petala* obcordata, 1.2—1.5 cm. longa, rosea vel alba, ad basin atro-viridia. *Stamina* 6 mm. longa, complanata, atro-viridia, antheris aurantiacis. *Styli* fere ad basin bifidi, ramis apice fimbriatis. *Ovarium* pilis glandulosis sparse pilosum.

Hab. Cape Province: Caledon Div., near Caledon, *Zeyher* 1920 (*type*), *E. & Z.* 128 (*D. grandiflora* Bartl.), *Bond* 131, *L. Guthrie* (Bol. Herb. 17213): Wellington Div., Sneeuwkop, *Marloth* 657: Tulbagh Div., Sneeuwgat Valley, *Thorne* (S.A. Mus. 51258): Cape Peninsula, Hills west of Simonstown, *W-Dod* 1454, 1507, *Salter* 263/8, 7382, South slope of Rooihoopte, *Salter* 8469: Piquetberg Div., Porterville, *Schlechter* 4915: Fl. Aug.—Sep.

This plant has hitherto been known as *D. pauciflora* (Banks) ex D.C., var. *minor* Sond. Recent examination of living specimens both of this plant and of the typical large-flowered *D. pauciflora* has shown that there are such marked differences in the leaves that I have no hesitation in raising it to the status of a species.

The existing descriptions of most of the South African Droserae, made from dried specimens, are very unsatisfactory. The type of *D. pauciflora* in the British Museum, which Mr. A. W. Exell kindly examined for me recently, is undoubtedly the same as *Bolus* 4278! from Groene Kloof, near Darling, cited by Dr. Diels in *Pflanzenreich* "Droseraceae" (1906) 108, where there is a very poor figure evidently drawn from a dried specimen. Recently gathered material from the same locality as *Bolus* 4278 shows that the description of the leaves of this species is most inaccurate. These cuneate-spathulate leaves, though larger, are very similar in structure to those of *D. trinervia* Spreng., having the

same rather inconspicuous stipules (in this case 2—3 mm. long) and a row of long flattened attenuate tentacles, 6—8 mm. long, with oblong boat-shaped glands 1·5 mm. long, around the apical margin. These glands often shrivel and fall off in dried specimens and the stipules are difficult to detect. The glands on the remainder of the tentacles are obovoid or knob-shaped. The base of the petal is deep olive-green as it is also in *D. cistiflora* L. and *D. Zeyheri*, not purple, and the scape is entirely leafless.

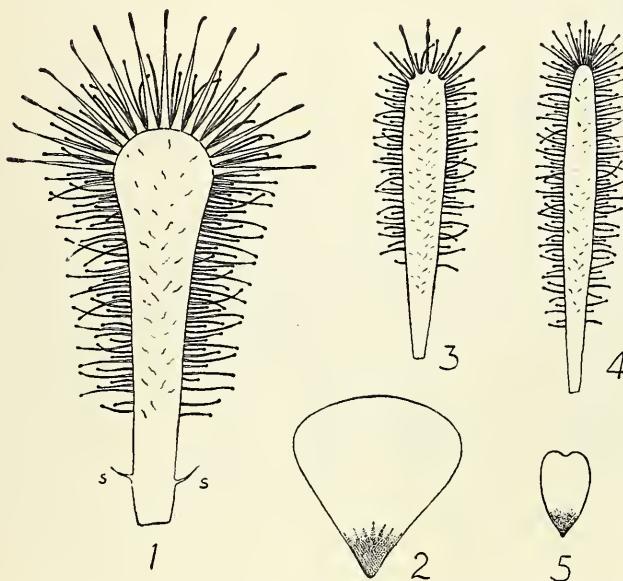


FIG. 2. 1. *Drosera pauciflora* (Banks) ex D.C., under side of leaf; s.s. stipules $\times 2$. 2. Petal, natural size. 3. *Drosera Zeyheri* Salter, under side of a basal leaf $\times 2$. 4. Ditto of a cauline leaf $\times 2$. 5. Petal, natural size. Del. T. M. Salter.

D. Zeyheri seems to be more closely related to *D. cistiflora* than to *D. pauciflora*. The leaves are oblong or narrowly oblanceolate and *without* stipules, those on the scape being very narrow and similar to those of *D. cistiflora*. On the lowest basal leaves the widening at the base of the apical tentacles, which are 3—5 mm. long, is scarcely perceptible and the glands, 0·4—0·5 mm. long, are proportionately much shorter than in *D. pauciflora*. On the upper leaves, including those on the scape, if present, *all* the tentacles are fliform and the glands knob-

shaped. The petals are obovate and only 1.2–1.5 cm. long, while those of *D. pauciflora* are very broadly cuneate, up to 2.7 cm. long and nearly as wide as long, with no indentation at the apex. The styles and stamens (with orange-coloured pollen) do not show much difference in this section, except in size.

The white-flowered form only of this species occurs in the Cape Peninsula where it is somewhat rare and flowers in August. As far as is known it is confined to the Simonstown and Smitswinkel hills where it grows in sandy soil in seasonally damp places, but it is not a marsh plant.

***Oxalis pulvinata.* Salter. (Oxalidaceae) § Multifoliolatae.**

Planta parva, omnino glabra, 2–4 cm. alta. *Bulbus* oblongus, apice acutus, ad 3 cm. longus, tunicis papyraceis, pallide brunneis. *Rhizoma* longum, cortice papyraceo brunneo obtectum. *Folia* 2–4, fusco-viridia: petioli filiformes rigidi, fere 2–5 cm. longi, super articulo basale, necnon apice abrupte ampliati et pulvinati: foliola 7–13, linearia, 0.8–5 cm. longa, fere 2 mm. lata, valde canaliculata, ad apicem leviter falcata, apice extremo proriformia, ecallosa. *Pedunculi* 1.5–2 cm. longi, apicem versus bibracteati bracteis subulatis alternis, fere 2 mm. longis. *Sepala* oblongo-lanceolata, obtusa, ecallosa, 7 mm. longa, striis purpureis minutis induta. *Corolla* fere 2 cm. longa, pallide rosea, tubo satis late infundibuliforme lutescente: petala cuneata, margine antice rotundata, basin versus leviter attenuata, basi extrema strumis 2 papillatis, saturate rubris, 3 mm. longis marginata. *Filamenta* glabra, longiora 6 mm. longa, breviter obtuseque dentata, superne pallida, inferne usque ad dentes saturate rubra. *Ovarium* oblongum, loculis 3-ovulatis, sicut styli glabrum.

Hab. Cape Province: Calvinia Div., in the dry stony bed of a rivulet on a kopje about 13 miles south of Loeriesfontein, Salter 7340 (*type* in Bolus Herbarium). Flowered *in cult.* April—May.

A small plant with smoky green leaves and on that account very inconspicuous when not in flower. Only a few plants were observed and these were very local, none of them showing any signs of having flowered (in June). The bulbs began to flower freely in the National Botanic Gardens at Kirstenbosch two years after planting.

It belongs to the complex group in which *O. flava* L. is the best known form. This group has been distinguished in keys to the § Multifoliolatae by the yellow flowers, but in actual fact in all the species forms with pale rose flowers are nearly as common as those with yellow and it is by no means improbable that a yellow-flowered form also occurs in this species.

O. pulvinata is distinguished by the remarkable red base of the androecium and the red papillate strumae at the base of the pale rose petals, by the conspicuous abrupt swelling just above the basal articulation of the petiole and by the complete absence of calli on the sepals. The leaflets are channelled, U-shaped in section, the sides converging at the apex as in the prow of a boat.

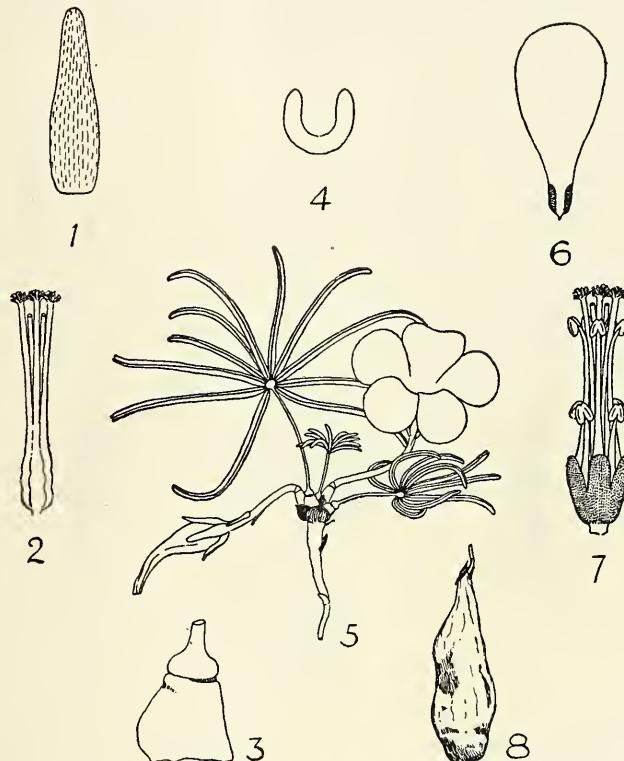


FIG. 3. *Oxalis pulvinata* Salter. 1. Sepal $\times 4$. 2. Gynoecium $\times 5$. 3. Base of petiole $\times 5$. 4. Cross section of leaflet $\times 10$. 5. Plant, natural size. 6. Petal $\times 1\frac{1}{2}$. 7. Androecium $\times 5$. 8. Bulb, natural size. (Salter 7340) Del. T. M. Salter.

***Oxalis commutata*, Sond., var. *concolor*, Salter, n. var.**

A forma typica differt:—*Planta in partibus omnibus minor. Foliola infra saepe saturate purpurea. Sepala latiora, obtusiora, plus minusve*

purpureo-suffusa vel marginata, callis 2 apicalibus conspicuis aurantiacis majoribus. *Corolla* rubro-purpurea, 1.2—1.5 cm. longa, glandulosopilosa, tubo concolore. *Stamina* purpurea, polline albo. *Styli* glandulosi, purpurei.

Hab. Cape Peninsula: in marshy places and on stream-sides. Red Hill, Salter 8407 (*type* in Bolus Herbarium), 6852; Table Mt., Guthrie 1143; Steenberg Plateau, Salter 621, L. Bolus (Bol. Herb. 14528, *ex parte*); West of Paulsberg, Salter 6216, 8081; between Sirkels Vlei and Hester's Dam, 4401. Flowers April—Aug.

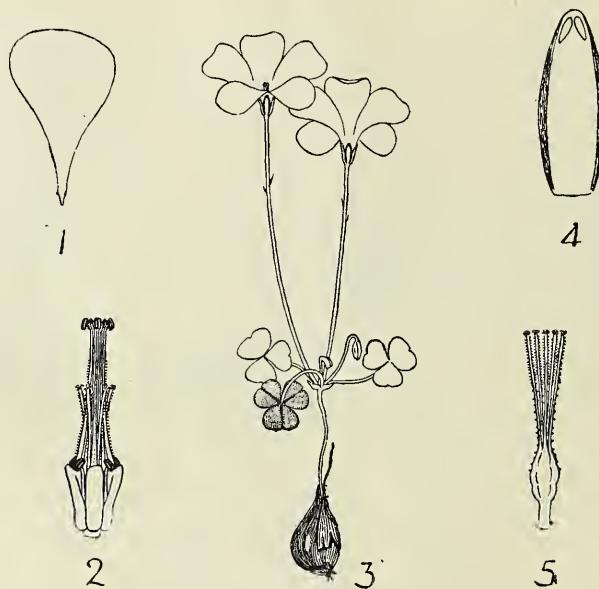


FIG. 4. *Oxalis commutata* Sond., var. *concolor* Salter. 1. Petal $\times 2$. 2. Androecium $\times 6$. 3. Plant, natural size. 4. Sepal $\times 8$. 5. Gynoecium $\times 6$. (Salter 8407) Del. T. M. Salter.

This consistently small-flowered variety has only been observed in the Cape Peninsula, where it occurs in damp places on hill plateaus and in the peaty marshes south of Smitswinkel. Although *O. commutata* is variable, particularly in the size and colour of the flowers, var. *concolor* besides being smaller, differs in having proportionately broader and more obtuse purplish sepals with larger orange-coloured apical calli, purple

styles, filaments and anthers, white pollen and glandular petals, while the purplish concolorous tube of the corolla is an uncommon character in the genus.

Oxalis commutata, Sond., var. **montana**, Salter, n. var.

Planta nana, plerumque viscosa vel glandulosa. A forma typica etiam differt:—*Pedunculi* 0.5—2.5 cm. longi. *Sepala* obtusa, callis 2 apicalibus inconspicuis vel obsoletis.

A dwarf mountain variety, usually viscous and often with minute glandular hairs. Leaflets smaller, purple below. Peduncles 0.5—2.5 cm. long. Sepals obtuse, the apical calli inconspicuous or wanting. Corolla more or less rosy or pale mauve with a yellow tube.

Hab. Cape Province: Cold Bokkeveld: Ceres Div., summit of Gydouw Pass, *Leipoldt* (Bol. Herb. 19757, *type* in Bolus Herbarium), *Salter* 2288, 2633: Clanwilliam Div., Cedarbergen, Sneeuwkop, *Bodkin* (Bol. Herb. 14582), Crystal Pool, *Weintroub* (Bol. Herb. 21867), Elands Kloof, *Levyns* (*Salter* 6404), Olifant's River Valley, *Edwards* 230: Worcester Div., Brandwacht Mt., *Stokoe* (Bol. Herb. 21868).

As regards the two varieties of *O. commutata* hitherto described, I cannot uphold var. *grandiflora* Sond. (*Zey.* Wolverivier in Herb. Sond. !) for it is purely an epharmonic form. Var. *pusilla* R. Knuth (Schlechter 10436, Papiesvlei) is obviously *O. Dammeriana* Schltr., the specimen in the Bolus Herbarium being so named in Schlechter's own handwriting.

Schlechter 8911, Cold Bokkeveld, which has been cited as *O. commutata* is not that species, but akin to *O. nidulans* E. & Z.

O. commutata has often been confused with *O. convexula* Jacq., partly on account of the short and rather inadequate description given by Sonder. Further none of the specimens cited by Sonder as *O. convexula* is in reality that species, all of them being forms of *O. depressa* E. & Z. (type E. & Z. 713, *ex parte*, *O. depressa*) a species which must be revived with *O. inops* E. & Z. as a synonym. This species is stemless and very different from *O. convexula*. *O. commutata* is distinguished from both these species by the complete absence of the pointed stipule-like wings below the articulation at the base of the petiole, which are characteristic of both *O. convexula* and *O. depressa*.

Oxalis variifolia, Steud., var. **ternata** Salter, n. var.

Folia 3-foliolata, forma typica aliter similis. *Bulbus* ovoideus, apice acutus, ad 2 cm. longus, tunicis nitentibus atro-brunneis. *Foliola* ecallosa. *Corolla* pallide lilacea, 1.7—2.2 cm. longa, tubo late infundibuliforme luteo: petalorum laminae oblique obovatae, unguibus longiores.

Filamenta, longiora breviter dentata. *Ovarii* loculae 2—3-ovulatae : styli inferne dense pubescentes, superne glanduloso-pilosi.

Hab. Cape Province : Piquetberg Div., 1 mile north of Piquetberg, Salter 5620 (*type* in Bolus Herbarium), Schlechter 7918 (*O. leptocalyx*).

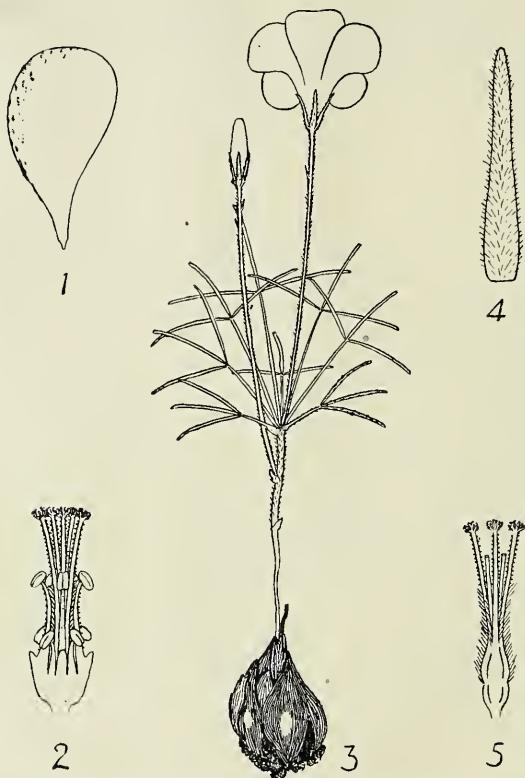


FIG. 5. *Oxalis variifolia* Steud., var. *ternata* Salter. 1. Petal $\times 1\frac{1}{2}$. 2. Androecium $\times 6$. 3. Plant, natural size. 4. Sepal $\times 5$. 5. Gynoecium $\times 6$. (Salter 5620) Del. T. M. Salter.

Very similar to the forms of *O. polyphylla* Jacq., var. *pubescens* Sond. which are without apical calli on the leaflets, but differing in its smooth bulb tunics, more slender attenuate sepals without apical calli, broader petals and 2—3-ovuled ovary chambers.

The typical form of *O. variifolia* (*O. pentaphylloides* Sond.)—type

E. & Z. 744 (*O. heterophylla* E. & Z.); is 5-foliate, but is otherwise similar to the variety described above. The species varies considerably in the degree of pubescence and Sonder's var. *glabriuscula* cannot be upheld. Two different species have been mounted in the Bolus Herbarium under the number *Schlechter* 7973 and only that with 5-foliate leaves is *O. variifolia*. The others, rather more robust plants with multifoliate leaves, are the same species as *Schlechter* 7341, *O. amblyodonta* Salter. This may be due to an error in distribution.

CORRECTION.

The examination of a number of type specimens of *Oxalis* which were kindly lent to me from Berlin Herbarium some time ago, has disclosed the fact that the two following species which were described as new and figured in this JOURNAL, had already been named:—

O. oculata Salter, Journ. of S.A. Botany, Vol I, p. 136 is *O. callosa* R. Knuth and *O. xerophila* Salter, l. c. Vol. IV, p. 16 is *O. primuloides* R. Knuth.

In both cases the original type specimens are very poor or starved and not typical of the species, which could not be recognised from the descriptions.